

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) An isolated polynucleotide comprising:
 - (a) a polynucleotide encoding the polypeptide shown in SEQ ID NO 2;
 - (b) a polynucleotide encoding the polypeptide encoded by the DNA contained in National Collection of Industrial, Food and Marine Bacteria Limited (NCIMB) Deposit No. 41101;
 - (c) a polynucleotide comprising a nucleotide sequence of SEQ ID NO 1;
 - (d) a polynucleotide comprising a nucleotide sequence that has at least 75% identity to the polynucleotide of any one of (a) to (c);
 - (e) a polynucleotide comprising a nucleotide sequence which is capable of hybridising to the polynucleotide of any one of (a) to (c); or
 - (f) a polynucleotide fragment of the polynucleotide of any one of (a) to (e).
2. (Withdrawn) The polynucleotide of claim 1, wherein said polynucleotide encodes a G-protein coupled receptor.
3. (Withdrawn) A polynucleotide probe or primer comprising at least 15 contiguous nucleotides of the polynucleotide of claim 1.
4. (Withdrawn) A vector comprising the polynucleotide of claim 1.
5. (Withdrawn) A host cell transformed or transfected with the vector of claim 4.
6. (Withdrawn) The host cell of claim 5 which is mammalian.
7. (Withdrawn) A process for producing a polypeptide comprising culturing the host cell of claim 5 under conditions sufficient for the expression of said polypeptide.

8. (Withdrawn) The process of claim 7, wherein said polypeptide is expressed at the surface of said host cell.
9. (Withdrawn) Polypeptides produced by the process of claim 7.
10. (Withdrawn) A membrane preparation of the cells of claim 8.
11. (Withdrawn) A polypeptide comprising:
 - (a) a polypeptide having the deduced amino acid sequence translated from the polynucleotide sequence in SEQ ID NO 1 and variants, fragments, homologues, analogues and derivatives thereof;
 - (b) a polypeptide of SEQ ID NO 2 and variants, fragments, homologues, analogues and derivatives thereof; or
 - (c) a polypeptide encoded by the cDNA of NCIMB Deposit No. 41101 and variants, fragments, homologues, analogues and derivatives of said polypeptide.
12. (Withdrawn) A pharmaceutical composition for the treatment of a patient having need to upregulate a receptor, said pharmaceutical composition comprising the polypeptide of claim 11.
13. (Withdrawn) An antibody against the polypeptide of claim 11.
14. (Withdrawn) A pharmaceutical composition for the treatment of a patient having need to activate or inhibit a receptor, said pharmaceutical composition comprising the antibody of claim 13.
15. (Currently amended) A method for identifying a compound that binds to the ~~the~~ [[a]] polypeptide of ~~claim 11~~ comprising an amino acid sequence encoded by the polynucleotide sequence of SEQ ID NO: 1, the amino acid sequence of SEQ ID NO:

2, or the amino acid sequence encoded by the cDNA of NCIMB Deposit No. 41101,
said method comprising the steps of:

- (a) contacting (i) a detectable ~~compound~~ nucleotide or nucleotide derivative known to bind to said polypeptide and (ii) a test compound with cells expressing said polypeptide or a membrane preparation of said cells;
- (b) contacting the same amount of said detectable ~~compound~~ nucleotide or nucleotide derivative with the same amount of said cells or a membrane preparation of said cells under the same conditions as in step (a) but in the absence of said test compound; and
- (c) comparing the amount of said detectable ~~compound~~ nucleotide or nucleotide derivative bound in steps (a) and (b), thereby identifying said test compound as a compound that binds to said polypeptide.

16. (Cancelled).

17. (Original) A method for identifying a compound that binds to and activates the ~~the~~ [[a]] polypeptide of claim 11 comprising an amino acid sequence encoded by the polynucleotide sequence of SEQ ID NO: 1, the amino acid sequence of SEQ ID NO: 2, or the amino acid sequence encoded by the cDNA of NCIMB Deposit No. 41101, said method comprising the steps of:

- (a) contacting said compound with cells expressing on the surface thereof said polypeptide or a membrane preparation of said cells, said polypeptide being associated with a second component capable of providing a detectable signal in response to the binding of said compound to said polypeptide; said contacting being under conditions sufficient to permit binding to said polypeptide; and
- (b) identifying said compound as binding to and activating said polypeptide by detecting the signal produced by said second component.

18. (Currently amended) A method for identifying a compound that binds to and inhibits activation of ~~the~~ [[a]] polypeptide of claim 11 comprising an amino acid sequence encoded by the polynucleotide sequence of SEQ ID NO: 1, the amino acid sequence

of SEQ ID NO: 2, or the amino acid sequence encoded by the cDNA of NCIMB
Deposit No. 41101, said method comprising the steps of:

- (a) contacting (i) a detectable first ~~component~~ nucleotide or nucleotide derivative known to bind to and activate said polypeptide and (ii) said compound with cells expressing on the surface thereof said polypeptide, or a membrane preparation of said cells, said polypeptide being associated with a second component capable of providing a detectable signal in response to the binding of said compound to said polypeptide; said contacting being under conditions sufficient to permit binding to said polypeptide; and
- (b) identifying said compound as binding to and inhibiting activation of said polypeptide by determining whether said first ~~component~~ nucleotide or nucleotide derivative binds to said polypeptide by detecting the absence or otherwise of a signal generated from the interaction of said first ~~component~~ nucleotide or nucleotide derivative with said polypeptide.

19. (Withdrawn) A microorganism as deposited under the accession number NCIMB 41101 at the National Collections of Industrial, Food and Marine Bacteria Ltd.

20. (Withdrawn) A method of elucidating the three-dimensional structure of the polypeptide of claim 11, said method comprising the steps of:

- (a) purifying said polypeptide;
- (b) crystallising said polypeptide; and
- (c) elucidating the structure of said polypeptide by X-ray crystallography.

21. (Withdrawn) A method of modelling the structure of the polypeptide of claim 11, said method comprising the steps of:

- (a) aligning the sequence of said polypeptide with the sequence of rhodopsin;
- (b) mapping the detected sequence differences of said polypeptide onto the known structure; and
- (c) deriving a homology model of said polypeptide.